IEEE P802.11  
Wireless LANs

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| ARC SC and Joint ARC SC/TGak July 2016 Meeting Minutes | | | | | |
| Date: 2017-07-29 | | | | | |
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Abstract

Minutes of the IEEE 802.11 ARC SC meetings held on 26 and 27 July 2016, at 10:30am and 8:00 am PDT, respectively, and of the joint IEEE 802.11 ARC SC and IEEE 802.11 TGak meeting held on 28 July 2016, at 8 am PDT. Note: the minutes for the joint meeting were provided by Ganesh Venkatesan.

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# Tuesday, July 26, 10:30 am (PDT)

**Administration:**

**Chair: Mark Hamilton, Ruckus**

**Vice Chair/Secretary Joseph Levy, InterDigital**

**Meeting call to order by Chair 10:30 am, 26 July 2016**

**Proposed Agenda slide deck:** [11-16/0793r0](https://mentor.ieee.org/802.11/dcn/16/11-16-0793-00-0arc-arc-sc-agenda-july-2016.ppt) **, updated during the meeting to r1 copied here for reference:**

**Tuesday, July 26, AM2**

* **Administrative: Minutes**
  + **Update on 802.11 as a component in a (larger) system/5G/IMT-2020** **(EC SC 5G)**
  + **IEEE 1588 mapping to IEEE 802.11** Update, no action expected:
  + **IETF/802 coordination:** update, as appropriate
  + **802.1AC status update; TGak update; TGaq update**
  + **“What is an ESS?”**
  + **AP/DS/Portal architecture and 802 concepts** - [11-16/0720r0](https://mentor.ieee.org/802.11/dcn/16/11-16-0720-00-0arc-stacked-architecture-discussion.pptx), [11-16/0457r1](https://mentor.ieee.org/802.11/dcn/16/11-16-0457-01-0arc-802-11ak-802-1ac-stas-aps-dses-and-convergence-functions.pptx),[11-15/0454r0](https://mentor.ieee.org/802.11/dcn/15/11-15-0454-00-0arc-some-more-ds-architecture-concepts.pptx), [11-14/1213r1](https://mentor.ieee.org/802.11/dcn/14/11-14-1213-01-0arc-ap-arch-concepts-and-distribution-system-access.pptx) (slides 9-11)

**Wednesday, July 27, AM1**

* + **MIB attributes Design Pattern -** [11-15/0355r3](https://mentor.ieee.org/802.11/dcn/15/11-15-0355-03-0arc-mib-truthvalue-usage-patterns.docx), [11-15/0891r0](https://mentor.ieee.org/802.11/dcn/15/11-15-0891-00-0arc-delta-r2r3-of-mib-truthvalue-usage-patterns.docx)
  + **Future sessions / SC activities**
    - **Future topic: Should we, and if so, how, add YANG models to 802.11?**

**Joint session with TGak, Thursday, July 28, AM1**

**Administration:**

The Chair reviewed the Administrative information in slides 5-9 in the Agenda document (11-16/0793r0)

**Call for Patents:**

The Chair reviewed the Patent policy and called for potentially essential patents – there was no response to the call.

**Approval of the Agenda:**

Approved by unanimous consent.

**Administrative: Minutes:**

Approved by unanimous consent.

**Update on 802.11 as a component in a (larger) system/5G/IMT-2020**

Joseph Levy (InterDigital) – reported the status of the 802 EC 5G SC: work is near completion, and option A is now getting enough support in the SC to be a a viable way forward. Though option B3 is still the preferred approach, by a slight margin.

**IEEE 1588 mapping to IEEE 802.11**

Update, no action expected as all activity seems to be 802.1AS.

A comment was made that: If you are using multi-cast – the advertisements are delayed until after the next beacon frame – this hurts broadcasting of network sync, video, or audio – the multi cast mode. It would be nice to enable this under 1588, without the delay.

In response to this comment it was stated that: 802.1a will support it.

The original commentor then stated: all multi cast packet must be transmitted after the beacon frame, if there are any devices in power save mode. As discussed in Geneva in 11-13/0792r1.

In response: There are ways to work around this with directed multicast.

The origninla commentor then stated: that can help when there are limited number of devices, but it would be better if multicast worked. I think there is a possible solution if we just work it.

In response: You mean beyond GCR – as GCR does not pay attention to devices that are not members of the GCR group

Also in response: 802.11ak may also help, as 802.11ak will move this issue upto the bridging layer and away from 11 and the beacon restrictions.

**IETF/802 coordination:**

No report from the IETF meeting was given. It is anticipated that there may be some activity in September.

**802.1AC status update**

Still waiting for the RAC to approve the Ethertype. An additional ballot recirculation was completed

**TGak update**

To the only open ARC/TGak issue is how to describe the ESS. (Though the issue of a side to side verses only up/down SAP connections may be raised again in the future.)

**TGaq update**

TGaq hopes to progress to sponsor ballot – there were some architecture issues that were discussed in previous meetings: what is an ANQ server and where is it in the architecture and also where a proxy would sit in the architecture. TGaq is anticipating continuing discussion on these items in the November time frame. This discussion and resolution is necessary as the group has bypassed the issue to move to sponsor ballot.

**“What is an ESS?”**

Reviewed slide 18 in the Agenda document (11-16/0793r0): current definition, and reviewed the other issues on the slides.

Discussion (the following comments were made):

1. Security aspects should be transportable in an ESS.
2. Mobility is key to the ESS definition, transparent to the STA.
3. The ESS should be defined so that when the STA client moves the higher layers don’t know the STA has moved. This applies to only a client STA.
4. In the days of DS, this was not defined, but, we fixed this by defining the SAP interface to the DS.
5. An ESS as an area where you can roam – this is an ideal view – but as long as you can roam it’s an ESS. An ESS is not simply a group of BSSs using the same SSID, if an ESS is correctly connected/configured roaming can be enabled. If roaming is enabled then the group of BSSs are an ESS, without the connectivity/roaming capability it is not an ESS. Interconnected BSSs means connected/configured/romable BSSs and that is what an ESS is.

**The Chair recessed the meeting at 12:33 pm PDT**

# Wednesday, July 27th, 8:00 am PDT

**Administration:**

**Chair: Mark Hamilton, Ruckus**

**Vice Chair/Secretary Joseph Levy, InterDigital**

Proposed Agenda slide deck: [11-16/0793r1](https://mentor.ieee.org/802.11/dcn/16/11-16-0793-01-0arc-arc-sc-agenda-july-2016.pptx) , updated during the meeting to r2, copied here for reference:

**Wednesday, July 27, AM1**

* **MIB attributes Design Pattern -** [11-15/0355r3](https://mentor.ieee.org/802.11/dcn/15/11-15-0355-03-0arc-mib-truthvalue-usage-patterns.docx), [11-15/0891r0](https://mentor.ieee.org/802.11/dcn/15/11-15-0891-00-0arc-delta-r2r3-of-mib-truthvalue-usage-patterns.docx)
* **Drop Eligibility Indicator discussion (Ganesh)** ([11-16/0713r0](https://mentor.ieee.org/802.11/dcn/16/11-16-0713-00-0arc-drop-eligibility-indicator-discussion.pptx))
* **Future sessions / SC activities**
  + **Future topic: Should we, and if so, how, add YANG models to 802.11?**

**Meeting call to order by Chair 8:05 am PDT, 27 July 2016**

**Administrative:**

Agenda reviewed and agreed by unanimous consent.

**MIB attributes Design Pattern**

Slide 21 – [11-16/0793r2](https://mentor.ieee.org/802.11/dcn/16/11-16-0793-02-0arc-arc-sc-agenda-july-2016.pptx), [11-15/0355r3](https://mentor.ieee.org/802.11/dcn/15/11-15-0355-03-0arc-mib-truthvalue-usage-patterns.docx) – is the basic status.

There is a good foundation.

Currently, there are no volunteers to work the MIB attributes design.

**Update on Yang/NETCONF Modeling discussions**

The Chair Stated: 802.3 has a study group on the YANG Models and the Chair attend part of the meeting.

There was a sales pitch on that people will use YANG Models – encouraging 802.11 to implement YANG Models. As this will make the 802.11 stuff plug into others stuff. So it is being suggested that we consider using YANG Models

It was asked: if the YANG Models allows for timed multi-threaded control?

At this point SMSP is not a useful way of describing control/modelling. Hence YANG Models should be considered.

**Future Sessions / SC activities**

Slide 22 – [11-16/0793r2](https://mentor.ieee.org/802.11/dcn/16/11-16-0793-02-0arc-arc-sc-agenda-july-2016.pptx) – provides a list of activities. YANG models was added to the SC activities, as a way forward. Planning the timing of the introduction of YANG models was also added as an activity.

Sessions for then next meeting will have the usual timing, a Monday or Tuesday slot, Wednesday AM1, and Thursday AM1 for a joint meeting with .11ak, .1.

**“What is an ESSS?”**

Returned to the ESSS discussion (slide 23 - [11-16/0793r2](https://mentor.ieee.org/802.11/dcn/16/11-16-0793-02-0arc-arc-sc-agenda-july-2016.pptx))

Discussion on the ESS boundary == demarcation of this transparency. There was discussion on expanding the definition to include some “mobility” support/features.

Recessed 10:01 am PDT.

# Thursday, July 28th, 8:00 am (PDT) – Joint ARC SC/TGak

**Administration:**

**ARC SC Chair: Mark Hamilton, Ruckus**

**ARC SC Vice Chair/Secretary Joseph Levy, InterDigital**

**TGak Chair: Donald Eastlake, Huawei**

**TGak Vice Chair: Mark Hamilton, Ruckus**

**Acting Secretary: Ganesh Venkatesan**

**Meeting call to order by Chair 8:04 am PDT**

The Chair reviewed the Patent policy and called for potentially essential patents – there was no response to the call.

Reminder to record attendance

**Agenda Slides** [**11-16/0776r6**](https://mentor.ieee.org/802.11/dcn/16/11-16-0776-06-00ak-july-2016-802-11ak-agenda.pptx), starting slide 27

**.11ak Status -- 11-16/559r29 is the latest spreadsheet**

Motions on approved comments planned for the PM2 session. The goal is to complete all comment resolutions at the Warsaw Interim Meeting

**GLK-GCR Parameter Set element Buffer Size field discussion**

(a) define originator as the GLK-GCR STA that sends Association Request and Responder as the GLK-AP

(b) In the behavior description state that the originator set the Buffer Count to a value including 0, if the originator accommodate any Buffer Count the responder would select for GLK-GCR with BlockAck operation; and is set to a non-zero value by the responder indicating the size of the window over which the responder would send BlockAckRequests.

**Document** [**11-16/1004r1**](https://mentor.ieee.org/802.11/dcn/16/11-16-1004-01-00ak-lb212-hamilton-assigned-comments.xlsx)**:**

**CID 1066:**

* Need clear up/down in Fig 5-8 (Role-specific Behavior Block for GLK-STA); show the ISS layer and a Bridge.
* Can we just stack the 802.1AC Convergence Function on top?
* 802.1AC Convergence Function is the layer that the top edge of 802.11 interfaces with (in all cases including GLK) -- this should probably be clarified and incorporated into REVmc architecture diagrams clearly -- Figure 5-3 in REVmc needs to be fixed to reflect this.
* In Figure 5-1 we could have two dotted lines replacing the dotted line to the LLC layer. The area between the dotted lines is the 802.1AC Convergence Function.
* Specific to this comment -- the 802.1AC Convergence Function block will move atop and for information purposes show .1AC layering to include ISS layer, Mux, etc. At the least we need to show the existence of multiple ISS layers (and the implied Mux) in the 802.1AC Convergence Function each of which is served by the service\_access\_point\_identifiers vector coming out of the 802.11 SAP.
* We also need to clarify that as the SYNRA addressed MPDU gets processed in the receive path, at a certain point in the stack past SYNRA processing it turns into a MSDU with the service\_access\_point\_identifiers vector of 1.

**CID 1073:**

Need sub-clauses in 5.1 to address GLK AP, GLK Mesh STA and GLK Mesh Gate

A bridge function is not always needed on top of the ISS -- A bridge function above the ISS is needed if a Mesh Gate interfaces below the ISS.

Should all GLK Mesh STAs be GLK Mesh Gates?

**CID 1273:**

What is the meaning of filtered? And what is the rationale behind the insertion?

Contact David Klopper for more information

**CID 1285:**

Accept. Delete "non-AP" as proposed by the commenter

**CID 1287:**

Reject

**CID 1289:**

What does StrictyOrdered mean in the context of GLK?  If we agree to not support StrictlyOrdered for GLK, we should clone what HT did to call out exceptions.

**Motion -- teleconferences Mondays 1000-1100 Hrs. ET, Aug 8, 15, 22 and 29th -- approved with no objection**

**Document** [**11-16/0251r6**](https://mentor.ieee.org/802.11/dcn/16/11-16-0251-06-00ak-glk-ess.docx)

Replace "Wireless Link" in the definition of General Link with "IEEE Std 802.11 link"

**Arch Discussion Topics -- not discussed in this meeting slot**

What is an ESS?

251r6 Figures 4-13 in .11ak draft

**The Chair adjourned ARC meeting at 10:00 am PDT**

**The Chair recessed TGak at 10:00 am PDT**